

ABSTRACT OF THE DISCLOSURE

A fabrication method is offered for shallow trench isolation structures. The insulating layer is deposited in trenches and on a mask layer on a substrate. The thickness of the insulating layer in the trenches is between the depth of the trenches and the depth of the trenches plus the thickness of the mask layer. Then, the thin layer is formed on the insulating layer. The screen layer is formed on the thin layer above the trenches to protect the thin layer when the thin layer and the insulating layer above active areas are removed. Next, the thin layer above the trenches and the mask layer are removed.